

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed February 9, 2005 (the "Office Action"). At the time of the Office Action, Claims 1-36 were pending in the application. The Examiner rejected Claims 1-36. Applicants respectfully request reconsideration and allowance of all pending claims.

Non-Statutory Double Patenting Rejection

Claims 1-36 of the present Application were provisionally rejected under the judicially created doctrine of obviousness-type double patenting. Applicants traverse this rejection but stand willing to file a terminal disclaimer upon an indication of allowable subject matter.

Section 102 Rejections

Claims 1-3, 5-13, 15-24, and 26-36 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,979,165 issued to Dighe et al. ("*Dighe*"). Applicants traverse these rejections for the reasons described below.

In order to establish a *prima facie* case of anticipation, all the elements of the claimed invention must be found within a single prior art reference. *Dewey & Almy Chemical Co. v. Mimex*, 124 F.2d 986, 52 USPQ 138 (2d Cir. 1942). Applicants respectfully submit that each and every element of Claims 1-3, 5-13, 15-24, and 26-36 is not found within the *Dighe* reference.

Claim 1 recites:

A method for communicating information in a network
having a plurality of nodes, comprising:
 providing a frame for storing information, the frame
identified by a frame type;
 determining the frame type of the frame;
 in response to determining the frame type, scheduling
periodic transmission of the frame from a node in the network;
and
 transmitting the frame at the scheduled time.

Applicants respectfully submit that the *Dighe* reference fails to teach, suggest, or disclose each element of Claim 1. Specifically, *Dighe* fails to disclose scheduling the transmission of a frame based on frame type. Instead, Applicants submit that the Examiner is

incorrectly interpreting the “packet” disclosed in *Dighe* as a “frame” as used in the present application.

Dighe generally teaches scheduling the transmission of packets depending on whether the packet is a statistical packet or a periodic packet. According to *Dighe*, “Problems associated with priority of transmission and/or switching of periodic packets and statistical packets are mitigated, in accordance with an aspect of the invention, by employing a packet transmission and/or switching arrangement in which statistical packets are scheduled for transmission and a prescribed interval is reserved for transmission of periodic packets for each scheduled statistical packet.” Col. 1, ll. 47-54.

However, the packet disclosed in *Dighe* is a unit of data, whereas the frame disclosed in the present application is a vehicle for carrying such data. For example, when describing particular embodiments of the present invention, the present application states, “When operating within a slave node 12 or master node 16, network interface unit 28 receives frames 22 transmitted within network 10, stores a copy of the frame in main memory 72, and *inserts data into or extracts data from slots 40 of frames 22.*” Application, p. 24, ll. 25-30 (emphasis added). As such, **a packet is not a frame.** Rather, a packet may be inserted into a frame. **This is a distinction that even *Dighe* recognizes.** In the Background of the Invention, *Dighe* states, “an interval T_1 of a *frame* is assigned for transmission of periodic *packets* and a much smaller interval T_2 of the *frame* is assigned for transmission of statistical *packets.*” *Dighe*, Col. 1, ll. 37-41 (emphasis added). Thus, even the *Dighe* reference itself does not support the Examiner’s interpretations of “packet” and “frame.” Instead, the “packets” in *Dighe* are similar to the “slots” in each frame in the present Application. See Application, p. 14, ll. 1-11. For at least this reason the rejection of Claim 1 is improper, and Applicants respectfully request that the rejection of Claim 1 be withdrawn.

Claim 7 recites:

A method for communicating information in a network having a plurality of nodes, comprising:
 providing a first frame for storing information, the frame having a first maximum size;
 providing a second frame for storing information, the frame having a second maximum size, the first size being unequal to the second size;
 determining the first maximum size and the second maximum size;
 in response to determining the first maximum size and the second maximum size, scheduling periodic transmission of

the first and second frames beginning at respective first and second scheduled times;
transmitting the first frame at the first scheduled time;
and
transmitting the second frame at the second scheduled time.

Applicants submit that *Dighe* also fails to teach, suggest, or disclose each element of Claim 7. For example, *Dighe* fails to disclose “in response to determining the first maximum size [of a first frame for storing information] and the second maximum size [of a second frame for storing information], scheduling periodic transmission of the first and second frames beginning at respective first and second scheduled times,” as required by Claim 7. Instead, *Dighe* discloses scheduling a packet transmission based on an actual packet length and an actual number of packet words. *See*, for example, *Dighe*, Col. 17, ll. 2-10, 45-51.

As discussed above with regard to Claim 1, the Examiner misinterprets “packet” to be synonymous with “frame,” in spite of the clear distinction between the two. Furthermore, the Examiner fails to recognize the difference between determining a maximum size of a frame and limiting a packet to a maximum size due to a design choice. In the Office Action, the Examiner states, “It was clearly [sic] the maximum size of the first and second packet is a design choice form [sic] 0-7.” Office Action, p. 2. Even assuming *arguendo* that the maximum size of the first and second packets is a design choice, and that a packet and a frame are synonymous, *Dighe* still fails to disclose “determining the first maximum size [of a first frame] and the second maximum size [of a second frame].” Limiting the packet size in *Dighe* due to a design choice is not equivalent to “determining the first maximum size [of a first frame] and the second maximum size [of a second frame]” and “scheduling periodic transmission of the first and second frames [in response to the determination].”

Furthermore, assuming that the maximum size of the first and second packet is a design choice, then the step of “determining the first maximum size and the second maximum size” would be superfluous, as all the packets would share the same maximum size limitation. Moreover, this shared maximum size limitation would make “scheduling periodic transmission of the first and second frames” in response to the determination impossible, since there would be no way to differentiate the frames based on maximum size. Accordingly, imposing a maximum packet size limitation is not equivalent to determining a maximum size of a frame. For at least these reasons, the rejection of Claim 7 is improper, and Applicants respectfully request that the rejection of Claim 7 be withdrawn.

Claim 11 recites:

A method for communicating information in a network having a plurality of nodes, comprising:
 providing a first frame for storing information and a second frame for storing information;
 repeatedly transmitting the first frame to a plurality of nodes in the network at a first rate; and
 repeatedly transmitting the second frame to a plurality of nodes in the network at a second rate, the first rate being unequal to the second rate.

Applicants submit that *Dighe* also fails to teach, suggest, or disclose each element of Claim 11. In rejecting Claim 11, the Examiner again misinterprets “packet” to be synonymous with “frame.” In addition, Claim 11 is allowable because *Dighe* fails to disclose “repeatedly transmitting the first frame to a plurality of nodes in the network at a first rate” and “repeatedly transmitting the second frame to a plurality of nodes in the network at a second rate, the first rate being unequal to the second rate,” as required by Claim 11. The Office Action appears to suggest that the fixed and variable packet lengths described in col. 6, ll. 29-66 of *Dighe* show this limitation; however, this is incorrect. The identified portions of *Dighe* instead describe a packet format implemented by a packetizer based on the actual size of the data (indicated using units such as bytes or a number of words, for example), not on the rate of frame transmission (indicated using units such as hertz, for example). Accordingly, the passage does not disclose anything remotely related to the repeated transmission of a frame at a particular rate that is unequal to another rate. As such, the rejection of Claim 11 is improper, and Applicants respectfully request that the rejection be withdrawn.

Claim 15 recites:

A method for initiating transmission of a sequence of related data frames in a network having a plurality of nodes serially interconnected in a loop topology, each frame identified by one of a plurality of type designations, comprising:
 building a transmission queue for frames of each designated type, the queue organized by frame type and containing pointers to the header of each sequence of frames;
 building a transmission schedule table for transmission times for sequences of frames of each designated type; and

transmitting in response to the transmission schedule table a sequence of frames of a first designated type to each of the serially interconnected nodes of the network when an entry exists for a given designated type of frame.

Applicants submit that *Dighe* also fails to teach, suggest, or disclose each element of Claim 15. For example, Claim 15 is allowable because *Dighe* fails to disclose “transmitting in response to the transmission schedule table a sequence of frames of a first designated type to each of the serially interconnected nodes of the network when an entry exists for a given designated type of frame.” The Office Action asserts that the timing diagrams disclosed in col. 5, ll. 7-37; col. 20, l. 3 - col. 21, l. 5; and col. 21, l. 44 - col. 22, l. 15 show this limitation. This is incorrect, however, because the identified portions of *Dighe* appear to instead describe a sequence for the transmission of packets based on packet type and size. *See Dighe*, Col. 20, ll. 27-36 (generally describing the timing of the transmission of a periodic packet P2 or a statistical packet S2 based on the packet type and the size). Once again, the Examiner misinterprets “packet” to be synonymous with “frame.” Thus, this does not constitute a disclosure of a transmission of a sequence of frames of a first designated frame type when an entry exists for a given designated type of frame. Because this limitation is entirely absent from *Dighe*, the rejection of Claim 15 is improper. Therefore, Applicants respectfully request that the rejection of Claim 15 be withdrawn.

Applicants submit that Claims 22, 28, 32, and 34 are also allowable over *Dighe*. In rejecting the Claims 22, 28, 32, and 34, the Examiner stated that the claims “contain the similar [sic] limitations set forth of claims 15-21. Therefore, [the claims] are rejected for the similar [sic] rationale set forth in claims 15-21.” Office Action, 8. However, the Examiner failed to designate as nearly as practicable the particular part of reference that is relied on to reject the pending claims as required by 37 C.F.R. § 1.104(c)(2). Furthermore, Claims 22, 28, 32, and 34 include limitations not present in (or similar to those of) Claims 15-21. For example, Claim 22 recites “scheduling a time for periodic transmission of the frame from a node in the network based on the identified frame type.” Claim 28 recites “determining transmission time for a sequence of frames of a first type in response to the stored transmission schedule table to initiate synchronous transmission of frames of the first type to each of the serially connected nodes.” Claim 32 recites “initiating transmission of a sequence of frames of a first frame type at a frame type start time at a predetermined rate during an allocated portion of a sample window to each of the plurality of serially connected nodes.”

Claim 34 recites “initiating transmission of a sequence of frames of a first frame type at a frame type start time at predetermined rate during an allocated portion of a sample window to each of the plurality of serially connected nodes.” None of these limitations are present in Claims 15-21. Thus, not only does the Examiner’s rejection of Claims 22-24 and 26-36 fail to satisfy 37 C.F.R. § 1.104(c)(2), but the portions of *Dighe* identified as allegedly supporting the rejection of Claims 15-21 provide no basis for the rejection of Claim 22-24. As such, the rejections of Claims 22, 28, 32, and 34 are improper, and Applicants respectfully request that the rejections of these claims be withdrawn.

Claims 2-6, 8-10, 12-14, 16-21, 23-27, 29-31, 33, and 35-36 depend from independent Claims 1, 7, 11, 15, 22, 28, 32, and 34, respectively. Therefore, Applicants respectfully submit that Claims 2-6, 8-10, 12-14, 16-21, 23-27, 29-31, 33, and 35-36 are allowable, for example, for the same reasons discussed above with regard to Claims 1, 7, 11, 15, 22, 28, 32, and 34, respectively. Applicants respectfully request that the rejections of these claims be withdrawn.

Section 103 Rejections

The Examiner rejected Claims 4, 14, and 25 under 35 U.S.C. § 103(a) as being unpatentable over *Dighe* in view of U.S. Patent No. 6,163,808 issued to Kilkki (“*Kilkki*”). The rejections of these claims are moot in view of the arguments presented above, as these claims depend from allowable independent Claims 1, 11, and 22, respectively. For at least these reasons, Applicants respectfully request the rejections of Claims 4, 14, and 25 be withdrawn.

CONCLUSION

Applicants respectfully submit that this Application is in condition for allowance. For at least the foregoing reasons, Applicants respectfully request full allowance of all pending claims. Although no fees are believed due, the Commissioner is hereby authorized to charge any fee or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts, LLP. If the Examiner feels that a telephone conference or an interview would advance prosecution of the Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

Respectfully submitted,

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